
 NATIONAL AEROSPACE LABORATORIES	Class : Restricted No. of copies: 4
Title : Developmental studies on HAN (hydroxyl ammonium nitrate) monopropellant micro thrusters – A preliminary study	
Authors: C. Rajashekar, Charlie Oommen*, S Amar +, H S Raghukumar and J J Isaac.	
Division : PROPULSION DIVISION	NAL Project No. : P-9-000
Document No. : PD-PR-1224	Date of issue: July 2012
Contents : Pages - 11 Figures - 4 Tables - Nil	
External Participation : Aerospace Engg dept, IISc, Bangalore	
Sponsor : In-house	
Approval : Head, Propulsion Division 	
Remarks : * Principal Research Scientist, Aerospace dept, IISc, Bangalore, + Student, SRM University Chennai	
Keywords : Micro thrusters, HAN, Monopropellant	
Abstract: A preliminary investigation of a HAN (hydroxyl ammonium nitrate) monopropellant has been carried out. A conceptual design of an Han micro thruster set-up for a thrust range of around 10 N has been completed; the HAN will be prepared by the Propellant Chemistry Group, Dept. of Aerospace Engg. IISc. A test bed will be built up at NAL to conduct the detailed study on the development of HAN micro thrusters which include the nozzle, rocket thrust chamber, catalytic reactor and the complete test setup to characterize the micro thruster.	